



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,126	03/08/2006	Gerd Schmaucks	E-1048	2783
20311	7590	03/12/2009	EXAMINER	
LUCAS & MERCANTI, LLP 475 PARK AVENUE SOUTH 15TH FLOOR NEW YORK, NY 10016			LACLAIR, DARCY D	
ART UNIT	PAPER NUMBER			
			1796	
MAIL DATE	DELIVERY MODE			
			03/12/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/517,126	Applicant(s) SCHMAUCKS, GERD
	Examiner Darcy D. LaClair	Art Unit 1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 17 February 2009.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-8 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-8 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **2/17/2009** has been entered.

All outstanding rejections, except for those maintained below are withdrawn in light of the amendment filed on **2/17/2008**.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Double Patenting

2. **Claims 1 - 8** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1-8** of copending **Application No. 11/718,590**.

The rejection is adequately set forth in **paragraphs 9-11** in the office action mailed **4/9/2008**, and **paragraph 5** of the office action mailed **10/15/2008**, and is incorporated here by reference.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claim 8** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 8 has been amended to recite a filler content of "about 5%" by weight of the resin. While 5% by weight is supported in the original claims (See original Claim 2), "about 5%" is not supported by the claims or specification. It is the examiner's position that this phrase fails to satisfy the written description requirement of 35 USC 112, first paragraph since there does not appear to be a written description requirement of the phrase "about 5%" in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Applicant has not pointed to any portion of the specification, and examiner has not found any support for this phraseology in the specification as originally filed.

Claim Rejections - 35 USC § 103

4. **Claims 1-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mitsuhashi et al. (JP 09012888 A)** in view of **Underwood et al. (US 4,201,060)**

In setting forth this rejection, in the absence of a full English-Language translation of **JP 09012888 A**, a machine translation has been relied upon.

It is noted that **Claims 1, 4, 7, and 8**, with respect to obtaining the amorphous particulates of microsilica, are stated in product by process format.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Absent showing of criticality, the process limitations in a product-by-process claim do not carry patentable weight.

With regard to amended Claim 1, Mitsuhashi teaches a silicone rubber composition. Silicone rubber constitutes an elastomeric compound. This composition contains 50- 100 weight sections of mica, 10-50 weight sections of crystallite, 1 – 80 weight sections of aluminum hydroxide, and 6 – 80 weight sections of magnesium hydroxide. (See abstract) This constitutes from 67 to 310 weight sections of filler. Additionally the composition contains 10 – 100 weight sections of silica powder, (see par [0004]) which is mist silica (fumed silica), hydrophobic silica, wet process silica, and quartz powder which is less than 50 micrometers. (see [0006]) Fumed silica is consistent with microsilica. Mitsuhashi teaches that an effect of the invention is easy workability. (see par [0016]) Mitsuhashi teaches that the silica should be 50 micrometers or less, (see par [0006]) but does not specifically teach a microsilica having the properties required by the amended claim. Underwood teaches a resin composition having a particulate amorphous silica as a filler, (see abstract) and teaches that the

invention extends to mixtures of thermoplastic resins with elastomers, which are an "internal blend" of elastomeric domains and thermoplastic domain. (See col 2 line 40-47) Underwood teaches that the nature of the filler (particle size, shape, and chemical constitution) is of importance because of its effect on the properties of a finished product, such as fire resistance, mechanical properties, and processing characteristics. (See col 1 line 56-64) The silica taught by Underwood is a substantially spherical amorphous silica particle obtained by a process by which silica is reduced and the reduction product is oxidized in the vapour phase to form silica, (see col 2 line 30-31) having at least 86% SiO₂, a density of 2.20-2.25 g/cm³, a specific surface area of 18-22 m²/g, and a particle size less than 1 micron, (See col 4 line 45-49) specifically exemplified as 0.15 microns (see col 5 line 68). Underwood teaches many advantages to this microsilica. There is a reduction in brittleness, higher impact strength, good chemical resistance, and the composition retains its flowability and has good processability; the microsilica also confers high thermal conductivity, which improves rheological properties, and improves fire and acid resistance. (See col 2 line 63-col 3 line 11) A large amount of filler can also be used when this microsilica is employed, which is a cost savings. (See col 3 line 12-15) The microsilica of Underwood complies with the requirements of Mitsuhashi, in that it is under 50 microns, and is one of the enumerated types of silica particulate. Underwood teaches that this microsilica is appropriate for use in resins, and specifically, resins having elastomeric domains. It is therefore expected that the wide variety of benefits enumerated by Underwood would be obtained in an elastomeric composition, and it would be obvious to one of ordinary

skill in the art to use the microsilica of Underwood as the silica of Mitsuhashi's invention in order to obtain the plethora of benefits enumerated above.

With respect to Claims 2-3, Mitsuhashi teaches the composition contains 10 – 100 weight sections of silica powder. (see par [0004]) Underwood teaches that the microsilica can be employed at loadings as high as 250, preferably 150 parts per hundred of resin, (see abstract) and indicates that no difficulties in processing were experienced, even at the highest filler loadings. (See col 16 line 41, 61)

With respect to Claim 4, Mitsuhashi teaches that the silicone rubber composition of the invention can be easily obtained by mixing the specified quantity of the components of the invention. Underwood teaches that the microsilica improves processing characteristics (see col 1 line 64), flowability and rheological properties (see col 3 line 2, 4). Underwood also teaches that by means of routine experimentation, the processor can determine the appropriate conditions for achieving a good dispersion, and that better processability is experienced with the amorphous silica than with other fillers. (See col 5 line 39-48) Based on the teachings of Underwood, it would be obvious to use the microsilica in an attempt to improve the processability of the composition. It would furthermore be obvious to mix first the rubber and fillers, followed by the silica. *Ex parte Rubin* , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also *In re Burhans*, 154 F.2d

690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

With respect to Claims 5-6, which require 5 to 300% and 10 to 150% by weight of microsilica, respectively, Mitsuhashi teaches the composition contains 10 – 100 weight sections of silica powder. (see par [0004]) Underwood teaches that the microsilica can be employed at loadings as high as 250, preferably 150 parts per hundred of resin, (see abstract) and indicates that no difficulties in processing were experienced, even at the highest filler loadings. (See col 16 line 41, 61)

With respect to Claim 7, Mitsuhashi discloses silica, and further indicates that one effect of the invention is easy workability. (see par [0016]) Underwood teaches that the microsilica improves processing characteristics (see col 1 line 64), flowability and rheological properties (see col 3 line 2, 4) and that better processability is experienced with the amorphous silica than with other fillers. (See col 5 line 39-48) With respect to the order in which silica is added, see the discussion of **Claim 4**, above. With respect to the properties of the microsilica, see the discussion of **Claim 1**, above. With respect to the content of microsilica, see the discussion of **Claims 2-3 and 5-6**, above. It would be obvious to one of ordinary skill in the art, taking the combined teachings of Mitsuhashi and Underwood, to employ the microsilica to improve the processability of a composition.

With respect to Claim 8, Mitsuhashi discloses aluminum hydroxide and magnesium hydroxide. (See abstract, Claim1) With respect to the order in which the fillers are added, see the discussion above with reference to **Claim 4**. Aluminum hydroxide and aluminum trihydrate are both names for the same chemical structure, Al(OH)_3 . Mitsuhashi describes in detail the effect of these hydroxides, which are to discharge water at high temperatures. (see par [0007]) This creates a barrier and increases the limiting oxygen index of the material, which is measured in the exemplified compounds (see par [0017]) and appears to be improved at a filler level of a total of 50 parts by weight of aluminum and magnesium for the inventive examples. (See Table 1, 4th line from bottom) A second disclosed effect of the invention is fire resistance/fire retardancy. Mitsuhashi combines silica, aluminum hydroxide, and magnesium hydroxide and obtains a composition with improved flame retardance and limiting oxygen index. Furthermore, Underwood teaches that the addition of the amorphous silica yields an improved fire resistance. (See col 3 line 10)

Response to Arguments

Applicant's arguments filed **2/17/2009** have been fully considered. Specifically, applicant argues **(A)** The double patenting rejection in view of copending application no 11/718,590 should be held in abeyance until the case is ready for allowance, **(B)** The independent claims have been amended to include the definition of the term microsilica as used in the specification, which is not taught in the cited references and provides superior results; specifically Mitsuhashi teaches a composition having a micron sized

silica, and no teaching or suggestion is given to a specific type or size of silica powders, except that the silica powders should be less than 50 microns, and **(C)** The microsilica added to the compound is now a specific particulate amorphous silica, which is not taught by Mitsuhashi, nor does Mitsuhashi disclose adding this specific microsilica to a highly filled elastomeric compound or using the microsilica as a modifier.

With respect to arguments (A), the double patenting rejection is maintained, and held in abeyance pending allowance.

With respect to arguments (B) and (C), applicant's arguments have been considered and the rejection of claims 1-3 under 35 USC §102 and claims 4-8 under 35 USC §103 has been withdrawn *in light of applicant's amendment* reciting the specific characteristics of the microsilica required. Support for the amendment on page 3, line 5-11 is acknowledged.

With respect to arguments (D), (E), and (F), applicant's arguments have been considered, but are moot in view of the rejection set forth above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darcy D. LaClair whose telephone number is (571)270-5462. The examiner can normally be reached on Monday-Friday 8:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Darcy D. LaClair
Examiner
Art Unit 1796

/DDL/

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796